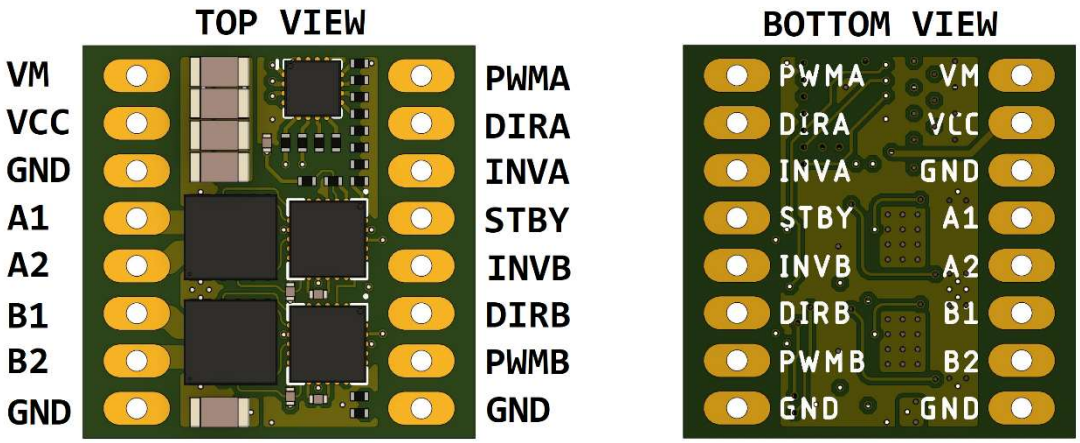
M2X10A



Driver pinout

VM	Motor positive power input
VCC	Control logic positive power input
GND	Ground
A1	Channel A output 1
A2	Channel A output 2
B1	Channel B output 1
B2	Channel B output 2
PWMA	Channel A PWM input
PWMB	Channel B PWM input
DIRA	Channel A direction control
DIRB	Channel B direction control
INVA	Channel A output inversion control
INVB	Channel B output inversion control
STBY	Driver standby (active low)

- Only one GND pin is required to be connected, but it is recommended to connect all GND pins to improve thermal performance.

Electrical and thermal characteristics

Property	Condition	Value	Units
VM max		30	V
VM min		6	V
Peak (Pulsed) current (for each channel)	T < 10us	80	A
Continuous current (for each channel)	+25 °C +70 °C	13 10	A
Max operating temperature (mosfets)		150	°C
Max operating temperature (board)		120	°C
Control circuit max operating temperature		85	°C
VCC max		5.5	V
VCC min		1.8	V

V input LOW	<= 0.2 * VCC	V
V input HIGH	>= 0.8 * VCC	V

1. Current limits are for individual channels, both channels can be active simultaneously at the specified limit, but the combined power will generate more heat, please ensure not to exceed maximum operating temperature.
2. IMPORTANT – The driver does not limit the output current, the user must ensure that the maximum operating current is not exceeded, otherwise the driver can be damaged.

Control description

STBY	PWMA	DIRA	INVA	A1	A2	Function
1	0	-	0	Z	Z	Coast
1	0	-	1	L	L	Brake (Slow decay)
1	1	0	-	H	L	Forward
1	1	1	-	L	H	Reverse
0	-	-	-	Z	Z	Sleep (Standby)

- Channel B control logic is identical to Channel A.
- All input pins have a 30K pull-down resistor to ground.
- The INVA and INVB pins control the inactive part of the PWM cycle, for applications like robotics it is recommended to use slow decay braking (INV set HIGH), this provides improved control.
- To reduce microcontroller pin usage, INV pins can be left unconnected or tied to VCC. STBY pin can be tied directly to VCC, for sumo robots can be connected to the start module.